



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,072	10/11/2001	Joerg Giesler	658/49679CO	7494

7590 04/06/2004

CROWELL & MORING, L.L.P.
P.O. Box 14300
Washington, DC 20044-4300

EXAMINER

SOOHOO, TONY GLEN

ART UNIT	PAPER NUMBER
----------	--------------

1723

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,072

Applicant(s)

GIESLER ET AL.

Examiner

Tony G Soohoo

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-27 is/are pending in the application.
- 4a) Of the above claim(s) 15-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-14 and 18-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11-24-03.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

Art Unit: 1723

DETAILED ACTION

Pending claims are 1, 3-17 with newly added claims 18-27

1. Claims 15-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Office Action mailed 08-12-2003.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 3-14, 18-27 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-28 of copending Application No. 09/784,337. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of each application all recited in various combinations elements of an extruder and gear pump with various dependent combination of elements of a 1) casing conical part; 2) screw taper; 3) a filter; 4) a metal detector and control system to the extruder; 5) axial adjustment of the screw.

Art Unit: 1723

Although the claim(s) are not identical, each of the combination of the independent claim and various dependent claims would have been obvious so that to provide additional advantages of flow control, flow quality, and efficient processing.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicant is placed on notice that the 09/784,337 will be also be rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-27 of this copending Application in subsequent action of the 09/784,337 (last office action mailed on 3-10-2004) if the conflicting claims between the two applications are not properly resolved.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 18-20, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by DE 1579001 (DE '001, also FR 1494681, same patent family).

The DE '001 teaches a system comprising a gear pump 27, 28, and a screw type extruder for delivering elastomeric material, comprising a screw 4, a screw casing 1,3, the screw-type extruder being arranged in front of the gear pump 27, 28, viewed in

Art Unit: 1723

the delivery of direction of the pumping medium whereby the extruder is located upstream of the gear pump, characterized in that the screw casing 1, 3 has a conical part as seen in the forward portion of the casing from the hopper 5 in the direction of the flow of material to the gear pumps, and the screw 4 has at least one tapering in the area of the conical part of the housing, and that the screw 4 is axially displaceable in the screw casing 1,3 which may produce a controlled feeding of pressure of fed material into the gear pump. Note that the taper is on the gear-pump-side end of the screw extruder 4 as opposed to the hopper end 5. Also note that the taper of the screw increased as viewed in the delivery direction of the material so that it tapers to a smaller section and that it has a cylindrical section at the nozzle 2, or the cylindrical section adjacent at the hopper 8, or the piston section 6. Further note that heat and pressure processing of plastics material provides a transport and processing of an elastomeric material and that that the control of the exit gap would also control and vary and control the pressure energy as it leaves the extruder and enters the gear pump.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1723

4. Claims 22-23, 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 1579001 (DE '001, also FR 1494681, same patent family, cited by applicant on the IDS filed JUL 29 2003, as reference AG).

The DE '001 reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of the length and the taper angle and ratio of conical part to the cylindrical part being of the values recited in the claim and the provision the casing 6 having a hollow section to provide a temperature control jacket to control the jacket.

With regards to the temperature control jacket, it is notoriously old and well known to provide an extruder barrel with a temperature control jacket within a barrel passage so as to better control the temperature of the material in the barrel, accordingly it is deemed that it would have been obvious to one of ordinary skill in the art to provide a hollow space in the jacket so as to provide a better control of the material to be processed.

With regards to the relative length, angles, and ratio as recited in the claims, the taper, length and ratio of length of a taper barrel geometry a well known positive variable to control the pressure, dwell time and temperature profile ranges of the material as it passes through the barrel from one end to the other. Since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art, (In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).), it is deemed that it would have been obvious to one of ordinary skill in the art to modify the taper angle, the length and ratio of lengths of the conical part to the cylindrical part to

Art Unit: 1723

the values recited in the claim(s) so as to optimize the pressure, temperature and dwell time of the material in the barrel for a more optimized processing profile of the material.

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over DE 1579001 (DE '001, also FR 1494681, same patent family) in view of Tadmor 5356208 (newly cited).

DE '001 discloses all of the recited subject matter as defined within the scope of the claims with the exception of a 'double helix' screw, twin flight screw.

The reference to Tadmor shows that a screw element for working plastic material may have plural thread flights may be provides upon the screw so as to provide further processing by the screw element.

Accordingly, it is deemed that it would have been obvious to one of ordinary skill in the art to provide a duplication of the flight helix of the DE '001 to include a second helix as shown by the reference to Tadmor whereby an additional helix may provide additional working of material by the additional flight is a mere duplication of parts. It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. The Fr 1494681 reference teaches a gear pump 27, 28, a screw type extruder for delivering elastomeric material, comprising a screw 4, a screw casing 1,3,

Art Unit: 1723

6. Claims 1, 3-7, 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 1579001 (DE '001, also FR 1494681, same patent family) in view of Degady et al and GB 1591470 and Engh, III et al 5407624.

The DE '001 teaches a system comprising a gear pump 27, 28, and a screw type extruder for delivering elastomeric material, comprising a screw 4, a screw casing 1,3, the screw-type extruder being arranged in front of the gear pump 27, 28, viewed in the delivery of direction of the pumping medium whereby the extruder is located upstream of the gear pump, characterized in that the screw casing 1, 3 has a conical part as seen in the forward portion of the casing from the hopper 5 in the direction of the flow of material to the gear pumps, and the screw 4 has at least one tapering in the area of the conical part of the housing, and that the screw 4 is axially displaceable in the screw casing 1,3 which may produce a controlled feeding of pressure of fed material into the gear pump. Note that the taper is on the gear-pump-side end of the screw extruder 4 as opposed to the hopper end 5. Also note that the taper of the screw increased as viewed in the delivery direction of the material so that it tapers to a smaller section and that it has a cylindrical section at the nozzle 2, or the cylindrical section adjacent at the hopper 8, or the piston section 6. Further note that heat and pressure processing of plastics material provides a transport and processing of an elastomeric material and that that the control of the exit gap would also control and vary and control the pressure energy as it leaves the extruder and enters the gear pump.

The DE '001 reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of a metal detector arranged in front of

Art Unit: 1723

the gear pump having a control unit which has a control signal to control the screw extruder.

The patent to Degady et al ('306, previously cited) discloses a metal detector 52 before an extruder for detecting metal contaminants in a extrusion process. Degady desires the removal of the metal from the material, but is absent in the manner it is removed.

The patent (newly cited) GB 1591470 (GB '470) teaches that in an extruder feeder device 9, 11, 13, a metal sensor 20 may be provided to provide an electrical signal via 20, 26 to control a means 23 to stop of the motor drive 14 of the screw so that the once a metal material is sensed, one may manually remove the material from the feed line prior to the restarting of the extruder screw.

The patent to Engh, III (et al) reference discloses that a supply line of material may be provided with a metal detector 28 which provides an "stop output" may be provide to a control unit, column 5, lines 22-28 so as to stop the transfer of material further downstream onto the conveyor 24, thus the material may be removed prior to further feeding of material downstream.

In view of the teachings of Degady '306 that one may provide a metal detector 52 before an extruder for detecting metal contaminants in a extrusion process, and the respective teachings of GB '470 and Engh, III that a metal detector may be configured to provide a signal to stop the motor of a conveyor or screw feeder so that the unwanted metal may be removed and then restarted to convey the material downstream, it is deemed that it would have been obvious to one of ordinary skill in the art to provide for

Art Unit: 1723

system of the DE '001 system with a metal detector before the extruder and with a signal to stop the extruder screw so that it may be able to stop the feeding of material down stream so that unwanted metal material may be removed so as to prevent the feeding of contaminated product from the extruder to the production line.

With regards to claims 9-14, the DE '001 reference as modified discloses all of the recited subject matter as defined within the scope of the claims with the exception of the length and the taper angle and ratio of conical part to the cylindrical part being of the values recited in the claim and the provision the casing 6 having a hollow section to provide a temperature control jacket to control the jacket.

With regards to the temperature control jacket, it is notoriously old and well known to provide an extruder barrel with a temperature control jacket within a barrel passage so as to better control the temperature of the material in the barrel, accordingly it is deemed that it would have been obvious to one of ordinary skill in the art to provide a hollow space in the jacket so as to provide a better control of the material to be processed.

With regards to the relative length, angles, and ratio as recited in the claims, the taper, length and ratio of length of a taper barrel geometry a well known positive variable to control the pressure, dwell time and temperature profile ranges of the material as it passes through the barrel from one end to the other. Since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art, (In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).), it is deemed that it would have been obvious to one of ordinary skill in the art to modify the

Art Unit: 1723

taper angle, the length and ratio of lengths of the conical part to the cylindrical part to the values recited in the claim(s) so as to optimize the pressure, temperature and dwell time of the material in the barrel for a more optimized processing profile of the material.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over DE 1579001 (DE '001, also FR 1494681, same patent family) in view of Degady et al and GB 1591470 and Engh, III et al 5407624 as applied to claim 5 above, and further in view of Tadmor 5356208 (newly cited).

DE '001, as modified above with regards to claim 5, discloses all of the recited subject matter as defined within the scope of the claims with the exception of a 'double helix' screw, twin flight screw.

The reference to Tadmor shows that a screw element for working plastic material may have plural thread flights may be provides upon the screw so as to provide further processing by the screw element.

Accordingly, it is deemed that it would have been obvious to one of ordinary skill in the art to provide a duplication of the flight helix of the DE '001 to include a second helix as shown by the reference to Tadmor whereby an additional helix may provide additional working of material by the additional flight is a mere duplication of parts. It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8. The Fr 1494681

Art Unit: 1723

reference teaches a gear pump 27, 28, a screw type extruder for delivering elastomeric material, comprising a screw 4, a screw casing 1,3.

Response to Arguments

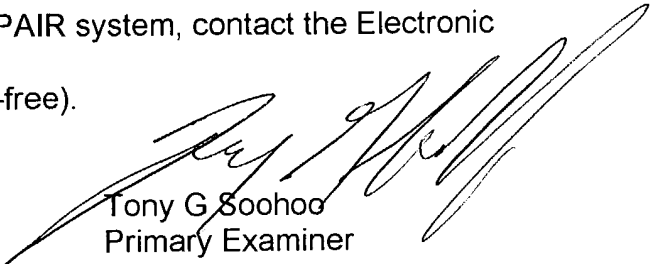
8. Applicant's arguments with respect to claim 11/17/2003 and 1/13/2004 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G Soohoo whose telephone number is (571) 272 1147. The examiner can normally be reached on 7:00 AM - 5:00 PM, Tues. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tony G Soohoo
Primary Examiner
Art Unit 1723
